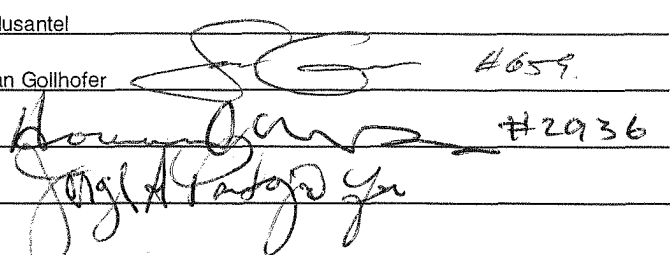


1. Incident Name Dominguez Channel Mystery Oil Spill	2. Operational Period to be covered by IAP (Date/Time) From: 0600 1/28/11 To: 0600 2/11/11	CG IAP COVER SHEET				
3. Approved by Incident Commander(s):						
<u>ORG</u> US EPA DFG LAWPD RP/ACTA	<u>NAME</u> Marty Powell / Jason Musantel Sau Garcia #659 / Bryan Gollhofer Howard Wong Elaine Silvestro					
						
<h2 style="margin: 0;">INCIDENT ACTION PLAN</h2> <p style="margin: 0;">The items checked below are included in this Incident Action Plan:</p>						
<input checked="" type="checkbox"/> ICS 202-CG (Response Objectives)						
<input type="checkbox"/> ICS 203-CG (Organization List) – OR – ICS 207-CG (Organization Chart)						
<input checked="" type="checkbox"/> ICS 204-CGs (Assignment Lists) One Copy each of any ICS 204-CG attachments:						
<input type="checkbox"/> ICS 205-CG (Communications Plan)						
<input checked="" type="checkbox"/> ICS 206-CG (Medical Plan)						
<input checked="" type="checkbox"/> ICS 208-CG (Site Safety Plan) or Note SSP Location						
<input checked="" type="checkbox"/> Map/Chart						
<input checked="" type="checkbox"/> Weather forecast / Tides/Currents						
<u>Other Attachments</u>						
<input checked="" type="checkbox"/> Incident Phone List						
<input checked="" type="checkbox"/> Waste Segregation and Qualification Plan						
<input checked="" type="checkbox"/> MSDS						
<input checked="" type="checkbox"/> Emergency Rain Event Notification						
<input type="checkbox"/> _____						
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J. Pantoja	1/28/11 0800					

1. Incident Name Dominguez Channel Mystery Oil Spill	2. Operational Period (Date/Time) From: 1-28-11 0600 To: 2-11-11 0600	INCIDENT OBJECTIVES ICS 202-CG
3. Objective(s) <ul style="list-style-type: none"> - SAFETY: Ensure the safety of all response personnel, facility employees, and public. See site safety plans for specifics - ISOLATION AND DENY ENTRY: Keep all non response personnel out of response areas. - NOTIFICATIONS: Notify proper authorities of any significant changes in spill situations. - ID AND HAZARD ASSESSMENT: See site safety plan. - ACTION PLANNING: Maintain containment and remove oil at source, pump station and retention basin. - CONTAINMENT AND CONTROL: Investigate possible sources and control when found. - PROTECTIVE ACTIONS: Continually assess downstream impacts and potential protective and recovery options (Marina's). - DECONTAMINATION AND CLEANUP: Ensure proper decontamination of personnel and equipment. - DISPOSAL: Dispose of all recovered as waste as law requires. Ensure that attached Waste Segregation Plan is followed. - DOCUMENTATION: Ensure proper documentation of all response activities, waste and segregation, and costs associated. 		
4. Operational Period Command Emphasis (Safety Message, Priorities, Key Decisions/Directions) <ul style="list-style-type: none"> - SHELL SOURCE AREA: <ul style="list-style-type: none"> -Obtain Right-of Entry (ACTA). -Mobilize equipment (NRC). -Continue recovery of surface product (NRC). -Contain and segregate waste; keep separate from other wastes (NRC). - RR ROW OUTFALL RECOVERY: <ul style="list-style-type: none"> -Mobilized equipment (NRC). -Maintain established temporary sand bag drain and pond. -Continue skimming and recovery efforts to minimize downstream impacts to pump station. -Assess cleanup issues to implement once source has been isolated. -During a rain event initiate call out list and staff as necessary. - SOURCE INVESTIGATION <ul style="list-style-type: none"> -Work in conjunction with agencies to determine source. -Once source is found, work with responsible party(ies) to revise IAP. -Additional ICS 204's as needed for new projects to identify source. - CITY PUMP STATION <ul style="list-style-type: none"> -Continue recovery of surface water within vault. -Pump down station as needed to reduce water level and reduce possibility of flooding. Portable sump pump as a possibility. -Continue to assess. Approved Site Safety Plan Located at:		
5. Prepared by: (Planning Section Chief) J. Pantoja		Date/Time 1/28/11 0800



1. Incident Name: Dominguez Mystery Oil Spill		4. Operational Period: From: 0600 1/28/11 To: 0600 2/11/11		MEDICAL PLAN ICS 206 - EPA	
5. Incident Medical Aid Station					
Medical Aid Stations		Location		Paramedics Yes No	
6. Transportation					
A. Ambulance Services					
Name		Address		Phone Paramedics Yes No	
South County Medical Transport	228 E. Pacific Coast Highway, Long Beach	562-599-0659	X		
B. Incident Ambulances					
7. Hospitals					
Name		Address		Travel Time Air Ground Phone Helipad Burn Center Yes No Yes No	
Pacific Hospital of Long Beach	2776 Pacific Ave. Long Beach 90806		24	562-997-2000	X
8. Medical Emergency Procedures					
9. Prepared by (Medical Unit Leader)		Date/Time		10. Reviewed by (Safety Officer) Date/Time	
J. Pantoja		1/28/11			

1926 E Pacific Coast Hwy, ...

maps.google.com

For quick access, place your bookmarks here on the bookmarks bar. [Insert bookmarks now...](#)

Web Images Videos Maps News Shopping Gmail more

Google maps emergency hospital loc: 1926 E Pacific Coast Hwy. Los Angeles, C Search Maps Show search options

Get Directions My Maps

1926 E Pacific Coast Hwy, Los Angeles, CA 90044

2776 Pacific Avenue, Long Beach, CA 90806 (P)

Get Directions

Driving directions to Pacific Hospital of Long Beach

Suggested routes

1. CA-1 S	7 mins
4.0 mi	
2. CA-1 S and Pacific Ave	8 mins
3.8 mi	
3. CA-1 S, Santa Fe Ave and W Willow St	9 mins
3.8 mi	

1926 E Pacific Coast Hwy
Los Angeles, CA 90744


Hide

Driving directions to Pacific Hospital of Long Beach

emergency hospital loc: 1926 E Pacific Coast Hwy, L


1926 E. Pacific Coast Highway, wilmington, ca

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Your National Weather Service forecast

3 Miles ESE Lomita CA

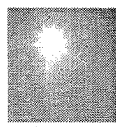










Enter Your "City, ST" or zip code

NWS Los Angeles/Oxnard, CA
Point Forecast: 3 Miles ESE Lomita CA
 33.78°N 118.27°W (Elev. 16 ft)

Mobile Weather Information | En Español
 Last Update: 3:31 am PST Jan 28, 2011
 Forecast Valid: 11am PST Jan 28, 2011-6pm PST Feb 3, 2011

Forecast at a Glance

Today	Tonight	Saturday	Saturday Night	Sunday	Sunday Night	Monday	Monday Night	Tuesday
								
Sunny	Patchy Fog	Patchy Fog	Increasing Clouds	Slight Chc Rain	Chance Rain	Chance Showers	Mostly Clear	Sunny
Hi 70 °F	Lo 48 °F	Hi 62 °F	Lo 49 °F	Hi 60 °F	Lo 46 °F	Hi 62 °F	Lo 45 °F	Hi 63 °F

Detailed 7-day Forecast

Hazardous weather condition(s):

Hazardous Weather Outlook

Today: Sunny, with a high near 70. Calm wind becoming southwest around 5 mph.

Tonight: Patchy fog after 4am. Otherwise, increasing clouds, with a low around 48. Calm wind.

Saturday: Patchy fog before 10am. Otherwise, cloudy through mid morning, then gradual clearing, with a high near 62. Calm wind becoming southeast around 5 mph.

Saturday Night: Increasing clouds, with a low around 49. Southwest wind around 5 mph becoming calm.

Sunday: A 20 percent chance of rain after 10am. Mostly cloudy, with a high near 60. Calm wind becoming west between 10 and 15 mph. Winds could gust as high as 20 mph.

Sunday Night: A 30 percent chance of rain. Mostly cloudy, with a low around 46.

Monday: A 30 percent chance of showers, mainly before 10am. Partly sunny, with a high near 62.

Monday Night: Mostly clear, with a low around 45.

Tuesday: Sunny, with a high near 63.

Tuesday Night: Mostly clear, with a low around 47.

Wednesday: Sunny, with a high near 68.

Wednesday Night: Mostly clear, with a low around 48.

Thursday: Sunny, with a high near 71.

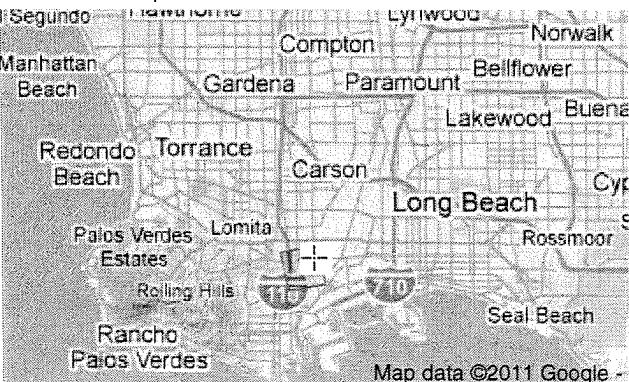
Current Conditions [Move Down]

Torrance, Zamperini Field Airport
Last Update on 28 Jan 9:47 PST

<p>Fair</p> <p>64°F (18°C)</p>	<p>Humidity: 34 %</p> <p>Wind Speed: calm</p> <p>Barometer: 30.12 in (N/A mb)</p> <p>Dewpoint: 36°F (2°C)</p> <p>Visibility: 15.00 Miles</p> <p>More Local Wx: 3 Day History:</p>
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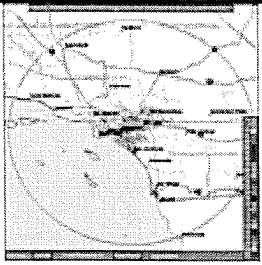
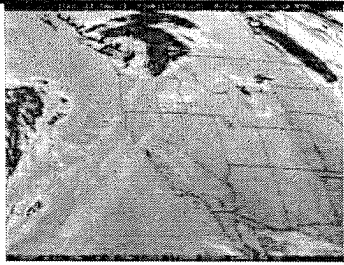
Detailed Point Forecast [Move Up]

Click Map for Forecast



Map data ©2011 Google

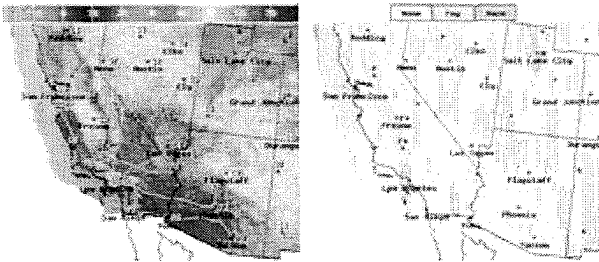
Radar and Satellite Images

Requested Location Forecast Area
Lat/Lon: 33.78°N 118.27°W Elevation: 16 ft



National Digital Forecast Database



Additional Forecasts & Information

Zone Area Forecast for Los Angeles County Coast
including Downtown Los Angeles, CA

Forecast Discussion

Printable Forecast

Text Only Forecast

Hourly Weather Graph

Tabular Forecast

Quick Forecast

International System of Units

About Point Forecasts

Observation Map (Regional)

Observation Map (Los Angeles)

Warnings

Experimental Graphical Forecasts

Quantitative Precipitation Forecast

Climatology

Forecast Weather Table Interface

Webmaster
National Weather Service:
Los Angeles/Oxnard, CA

[Back to Previous Page](#)

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Los Angeles, California

Units are feet

Friday 2011-01-28

Sunrise 6:52 AM PST, Sunset 5:20 PM PST

Moonrise 2:27 AM PST, Moonset 12:34 PM PST

High Tide: 4:32 AM PST 5.5

Low Tide: 12:12 PM PST -0.1

High Tide: 6:55 PM PST 3.3

Low Tide: 11:05 PM PST 2.4

Saturday 2011-01-29

Sunrise 6:51 AM PST, Sunset 5:21 PM PST

Moonrise 3:26 AM PST, Moonset 1:28 PM PST

High Tide: 5:33 AM PST 5.8

Low Tide: 1:03 PM PST -0.6

High Tide: 7:42 PM PST 3.6

Sunday 2011-01-30

Sunrise 6:50 AM PST, Sunset 5:21 PM PST

Moonrise 4:19 AM PST, Moonset 2:25 PM PST

Low Tide: 12:09 AM PST 2.3

High Tide: 6:25 AM PST 6.0

Low Tide: 1:44 PM PST -0.8

High Tide: 8:17 PM PST 3.9

Monday 2011-01-31

Sunrise 6:50 AM PST, Sunset 5:22 PM PST

Moonrise 5:06 AM PST, Moonset 3:25 PM PST

Low Tide: 12:59 AM PST 2.1

High Tide: 7:09 AM PST 6.1

Low Tide: 2:19 PM PST -0.9

High Tide: 8:47 PM PST 4.1

Tuesday 2011-02-01

Sunrise 6:49 AM PST, Sunset 5:23 PM PST

Moonrise 5:47 AM PST, Moonset 4:24 PM PST

Low Tide: 1:40 AM PST 1.9

High Tide: 7:47 AM PST 6.1

Low Tide: 2:49 PM PST -0.9

High Tide: 9:14 PM PST 4.2

Wednesday 2011-02-02 New Moon

Sunrise 6:48 AM PST, Sunset 5:24 PM PST

Moonrise 6:22 AM PST, Moonset 5:22 PM PST

Low Tide: 2:17 AM PST 1.7

High Tide: 8:22 AM PST 6.0
Low Tide: 3:17 PM PST -0.8
High Tide: 9:39 PM PST 4.3

Thursday 2011-02-03

Sunrise 6:48 AM PST, Sunset 5:25 PM PST
Moonrise 6:54 AM PST, Moonset 6:19 PM PST
Low Tide: 2:51 AM PST 1.6
High Tide: 8:54 AM PST 5.8
Low Tide: 3:43 PM PST -0.5
High Tide: 10:03 PM PST 4.4

Friday 2011-02-04

Sunrise 6:47 AM PST, Sunset 5:26 PM PST
Moonrise 7:23 AM PST, Moonset 7:15 PM PST
Low Tide: 3:25 AM PST 1.5
High Tide: 9:26 AM PST 5.5
Low Tide: 4:08 PM PST -0.2
High Tide: 10:28 PM PST 4.5

Saturday 2011-02-05

Sunrise 6:46 AM PST, Sunset 5:27 PM PST
Moonrise 7:51 AM PST, Moonset 8:09 PM PST
Low Tide: 4:00 AM PST 1.4
High Tide: 9:57 AM PST 5.1
Low Tide: 4:31 PM PST 0.1
High Tide: 10:53 PM PST 4.5

Sunday 2011-02-06

Sunrise 6:45 AM PST, Sunset 5:28 PM PST
Moonrise 8:18 AM PST, Moonset 9:04 PM PST
Low Tide: 4:37 AM PST 1.5
High Tide: 10:30 AM PST 4.6
Low Tide: 4:54 PM PST 0.6
High Tide: 11:20 PM PST 4.5

Monday 2011-02-07

Sunrise 6:44 AM PST, Sunset 5:29 PM PST
Moonrise 8:46 AM PST, Moonset 9:58 PM PST
Low Tide: 5:20 AM PST 1.5
High Tide: 11:05 AM PST 4.0
Low Tide: 5:15 PM PST 1.0
High Tide: 11:49 PM PST 4.5

Tuesday 2011-02-08

Sunrise 6:44 AM PST, Sunset 5:30 PM PST

Moonrise 9:15 AM PST, Moonset 10:53 PM PST

Low Tide: 6:11 AM PST 1.6

High Tide: 11:45 AM PST 3.4

Low Tide: 5:35 PM PST 1.5

Wednesday 2011-02-09

Sunrise 6:43 AM PST, Sunset 5:31 PM PST

Moonrise 9:47 AM PST, Moonset 11:50 PM PST

High Tide: 12:24 AM PST 4.5

Low Tide: 7:23 AM PST 1.7

High Tide: 12:45 PM PST 2.8

Low Tide: 5:53 PM PST 1.9

Thursday 2011-02-10 First Quarter Moon

Sunrise 6:42 AM PST, Sunset 5:32 PM PST

Moonrise 10:23 AM PST, Moonset 12:48 AM PST

High Tide: 1:11 AM PST 4.4

Low Tide: 9:10 AM PST 1.6

High Tide: 3:10 PM PST 2.4

Low Tide: 6:05 PM PST 2.3

Friday 2011-02-11

Sunrise 6:41 AM PST, Sunset 5:33 PM PST

Moonset 12:48 AM PST, Moonrise 11:04 AM PST

High Tide: 2:19 AM PST 4.5

Low Tide: 10:53 AM PST 1.2

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8. Special Instructions Build containment with permanency in mind. Keep sandbags segregated from Shell site. -Read, understand, and follow site safety plan. -Do not attempt to capture or approach oiled/injured wildlife. Notify an on-site DFG personnel or a member of the Unified Command -Report all oiled wildlife to Cory Kong @ 562-477-7081 -Refer all media questions and concerns to Martin Powell @ 562-760-7028																																																																													
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Dominguez Channel Mystery Oil Spill Emergency Rain Event Notifications

- Steve McQuay, DWP Sanitation Supervisor, City of Los Angeles Pump Station Operator
24-Hour Notification: 213-300-3662
Alternates:
 - Howard Wong: 213-725-6313
 - Steven Pedersen: 213-725-6308
- NRC Environmental
24-Hour Notification: 1-800-337-7455
Alternates:
 - Michael Sica: 310-628-0725
 - Jim Kiatos: 310-628-1211
- Randy Stuart, Balfour Beatty Rail for RR Crossing Access
24-Hour Notification: 310-863-0912
Mike Mejia for all TV events: 310-863-0860
- Tesoro Tower/Shell Sump Valve Operation
310-522-8665 (if no answer will roll over to cell phone for on-call person)
- Steven Pedersen, LA City (Courtesy Call): 213-725-6308
Alternates:
 - Joe Fortaleza: 213-725-6304
 - Tri Tran: 213-725-6306
- OSC Marty Powell, EPA: 562-760-7028

Waste Segregation and Quantification Plan

Date: January 14, 2011

Incident Name: Dominguez Channel Mystery Oil Spill

Location Latitude: 33.785010, Longitude: -118.2372450

OBJECTIVE

To facilitate proper disposal and quantification of recovered pollutant generated from response and recovery operations associated with the incident named above.

WASTE STREAM SEPARATION

Recovered pollutant shall be separated by waste stream type and location where the waste was recovered. Pollutants recovered from Waters of the State shall be kept separate from pollutants recovered elsewhere.

Liquids: Liquids shall be held in secure tanks for gauging to determine oil content by DFG and Responsible Party representatives prior to disposal. In order to expedite cleanup and disposal, a direct assessment of the contents can be made, or a representative sample may be analyzed by the TSD Facility. Liquids recovered during flushing or steaming and Decontamination operations should be kept separate from recovered free floating oil.

Solids: Recovered pollutant held in solids will be placed onto roll-off bins or over-pack drums with tare weights. Solids shall be segregated as follows; sorbents, debris (oiled), soil, or PPE. Solids recovered from Waters of the State or adjacent shorelines shall be stored separate from those recovered elsewhere.

Vegetation/Wildlife: Vegetation and/or wildlife removed in the cleanup operation will be bagged and weighed separately.

QUANTIFICATION

Quantification of recovered pollutants will be conducted in accordance with California Code of Regulations Title 14, Section 877. The Responsible Party and the Department of Fish and Game may stipulate to the amount of oil spilled and/or recovered. The amount of recovered pollutant can be determined by visual assessment by DFG and responsible party or by lab analysis of samples taken in the presence of DFG and responsible party representatives.

FINAL DISPOSAL

When quantification is final, the waste may be disposed of in accordance with all Federal, State, and Local laws. A copy of the Hazardous Waste Manifest and associated documents shall be provided to the DFG as proof of disposal.

INCIDENT NAME: Dominguez Channel Mystery oil Spill

The following table indicates the types of waste to segregate. Place a checkmark in the appropriate box for this incident. This plan should be included in the IAP.

Waters of the State of California			
Liquids		Solids	
Free Floating Product		Sorbent materials	
Flushing and/or Steam Cleaning		Vegetation / Sediment	
Decontamination		Impacted Wildlife	
		Oiled Trash & Debris	
		PPE	
		Response Materials	
Non-Waters of the State			
Liquids		Solids	
Recovered on property	✓	Sorbent Boom/Pads	✓
Recovered off property		Vegetation / Soils	
W/I 2ndry containment		Impacted Wildlife	
Product from Source		Oiled Trash & Debris	✓
Steam Cleaning		PPE	✓
Decontamination	✓	Response Materials	✓

Comments: _____

Date: 12/29/2010

First Name	Last Name	Agency	Phone #
James	Foto	DFG/OSPR	562-598-4292
Michael	Caliguire	USCG PST	415-798-4521
Howard	Wong	LA WPD	213-725-6313
Erik	Ricardo	DBES	909-499-6959
Franmcisco	Arcaute	USEPA	213-798-1404
Mike	Mejia	BBRI	310-863-0860
Brett	Bernstein	Shell	213-494-6598
Dean	Persinger	OLBI	562-624-3284
Charlie	Waters	OLBI	562-900-2347
Randy	Stuart		310-863-0912
David	Duthie		714-553-0246
Elaine	Silvestro	ACTA	310-650-3359
Anastasia	Norris	DFG/OSPR	310-310-9917
Adam	Smith	EPA START	310-405-2393
Sau	Garcia	OSPR	562-843-2714
Dion	Coluso	LA WPD	213-494-6598
Eric	Lee	LA WPD	213-725-6313
Bryan	Gollhoffer	OSPR	562-708-7757
Robert	Wise	USEPA	562-889-2572
Tom	Williams	Fire marshal	562-425-1902
Gonzalo	Barriga	LA WPD	213-725-8862
Corey	Kong	OSPR	562-477-7081
Christian	Corbo	OSPR	310-864-5299
Robert	Vega	LA WPD	213-485-3991
Steve	Pedersen	LA WPD	213-725-6308
Shahram	Kharaghani	LA WPD	213-485-0587
Steve	McQuay	LA WPD	213-300-3662
Bernie	Roger	LA WPD	213-359-4774
Vince	Sato	LA City	213-215-9087
Adel	Halekhalil	LA Sanitator	213-485-2210
David	Cheung	LA Sanitator	213-485-2423
Chris	Foley	POLA	310-732-3683
Chris	Cannon	POLA	310-732-3763
Martin	Ebel	Lockheed	412-889-2258
Tom	Tobin	NPS	
Robert	Hall	NPS	562-244-4313

Date: 12/28/2010

First Name	Last Name	Agency	Phone #
Anastasia	Norris	DFG/OSPR	310-310-9917
Diana	Lang	OLBI	562-624-3314
Charlie	Waters	OLBI	562-900-2347
Dean	Pershinger	OLBI	562-624-3284
Terry	Dickinson	City of LA San	213-610-6287
David	Duthie	ACTA	714-553-0246
Elaine	Silvestro	ACTA	310-650-3359
Randy	Stuart	BBRI	310-863-0912
Brett	Bernstein	Shell	213-494-6598
Victor	Cunton	Shell	310-782-5121
Mike	Caliguire	USCG PST	415-798-4521
Mike	Mejia	BBRI	310-863-0860
Gonzolo	Barriga	LA WPD	213-725-8862
Eric	Lee	LA WPD	213-725-8863
Martin	Powell	US EPA	562-760-7028
Thomas	Williams	State Fire Marst	562-425-1902
Rafael	Aguiar	W.C.S.D Sanita	562-208-4363
Brian	McCormick	City of LA San	323-342-1577
Kyle	Armstrong	Crimson Pipelin	562-577-3558

Date: 12/27/2010

First Name	Last Name	Agency	Phone #
Pete	Ceniceros	L.A Sanitation	213-485-5879
Gaven	Cooter	AECOM	805-452-3523
Peter	James	HBC (?)	310-421-7025
Howard	Wong	City of L.A. WPD	213-725-6313
Deirdre	Williams	L.A. CoFD/HHMD	213-215-4278
Dion	Colliso	City of L.A. WPD	213-425-6300
Adam	Smith	EPA START	310405-2393
Jason	Schmidt	SPEC Services	714-316-3705
Louis	Nelson	BP	562-728-2789
Jason	Musante	US EPA	213-479-2120
James	Foto	DFG/OSPR	310-683-3032
Tom	Dahlgren	Warren E&P	562-307-7001
Freddie	Bizzell	USCG	415-717-4492
Sau	Garcia	CA DFG-OSPR/SOSC	562-843-2714
Jeremy	O'Neal	USCG	415-720-4178
George	Alvarez	Shell Oil	310-804-8615
Cesar	Zorrilla	DBES	562-965-4654
Randy	Stuart	BBRI	310-863-0912
Mike	Mejia	BBRI	310-863-0860
James	Ranuin	DBES	909-810-6626
Iona	Jorge	DBES	951-956-1277
Art	Garcia	DBES	909-800-8461
Jr	Rodriguez	BDES	951-385-7625
David	Dicamas (?)	AIS	323-974-9532
Thomas	Williams	State Pipeline Marshal F	562-425-1902
Anastasia	Norris	DFG/OSPR	310-310-9917
Garry	Kepes	BP	949-300-2666
Dash	Eskandaru (?)	BP	949-636-8220
Hal	Hammer	BP	562-755-8588
Marc	Trines (?)	BP	562-572-4055
Ray	Smith	ARB	949-279-0808
Corey	Kong	DFG/OSPR	562-477-7081
Wm	Short	ANCON/BP	310-864-1022
Kathleen	Andrews	CDOGGR	714-816-6847
Roy	Hernandez	ARB	949-795-1612
Pete	Lopez	ARB	949-289-0569
Robert	Ashbee Jr	ARB	562-254-1460
Robert	Casbee	ARB	562-256-4565
Victor	Garcia	ARB	562-843-3664
Aureliot	Lopez	ARB	310-631-2671
Matthew	Diener	USEPA START	310-310-0267
Julie	Skoglund	IBRRC	310-218-6825
Adam	Ribota	IBRRC	714-931-8343
Perkins	Bob	Warren E&P	310-505-6893
Carlos	Martinez	ACE Engineering, Inc	909-478-4088
Andrew	Nicholls	BBRI	310-863-0038
Dean	Persinger	OLBI	562-624-3284
Charlie	Waters	OLBI	562-900-2347
Jesse	Marquez	BBRI	310-863-0945
Elaine	Silvestro	ACTA	310-650-3359

Date: 12/27/2010

First Name	Last Name	Agency	Phone #
Brett	Bernstein	Shell	213-494-6598
Roy	Hernandez	A.R.B	949-795-1612
Eddie	Boyle	DBES	
Ken	Potts	DBES	
Robert	Hill	DBES	
Julian	Navarro	DBES	
Frank	Navaro	DBES	
Perez	Steven	IQ	
Mike	Ramirez	IQ Personnel	951-261-2994
James	Rankin		909-810-9626
Duane	Jones	BBRI	
Randy	Stuart		310-863-0912
Jr	Rodriguez	DBES	951-385-7629
George	Alvarez	Shell Oil	310-804-8615
Rob	Asbee	ARB	562-256-4565
Victor	Garcia	ARB	562-843-3664
Adam	Ribota	IBRRC	714-931-8343
Neil	Uelman	IBRRC	562-253-9073
Anasatsia	Norris	DFG/OSPR	310-310-9917
Freddie	Bizzell	USCG PST	415-717-4492
Jeremy	O'Neal	USCG PST	415-717-4492
Corey	Kong	DFG/OSPR	562-425-7081
Thomas	Williams	State Fire Marshal/Pipeline Safety	562-425-1902
Lito	Arambulo	LA WPD	213-725-6297
Susan	Berberabe (?)	LA WPD	213-272-8426
Dean	Persinger	OLBI	562-624-3284
Kathleen	Andrews	DOGGER	714-920-1009
Russell	Burkhardt (?)	WEP	562-307-4928
Dan	Gabel	Tesoro	310-522-8602
Ken	Pacheco	Tesoro	310-522-6413
Mike	Kulakowski	Tesoro	310-522-6199
Vicki	Jansen	Tesoro	310-522-6222
Kim	Fowler	Tesoro	310-522-8603
David	Fuentes	Tesoro/W.A. Rasic	310-864-0497
Dion	Coluso	City of LA WPD	213-725-6300
Rafael	Aguiar	City of LA W.C.S.D Sanitation	562-208-4363

Date: 12/23/2010

First Name	Last Name	Agency	Phone #
Pete	Ceniceros	L.A. Sanitation	213-485-5879
Gaven	Cooter	AECOM	805-452-3523
Peter	James	HBC (?)	310-421-7025
Howard	Wong	City of L.A. WPD	213-725-6313
Deirdre	Williams	L.A. CoFD/HHMD	213-215-4278
Dion	Colliso	City of L.A. WPD	213-425-6300
Adam	Smith	EPA START	310-405-2393
Jason	Schmidt	SPEC Services	714-316-3705
Louis	Nelson	BP	562-728-2789
Jason	Musante	US EPA	213-479-2120
James	Foto	DFG/OSPR	310-683-3032
Tom	Dahlgren	Warren E&P	562-307-7001
Freddie	Bizzell	USCG	415-717-4492
Sau	Garcia	CA DFG-OSPR/SOSC	562-843-2714
Jeremy	O'Neal	USCG	415-720-4178
George	Alvarez	Shell Oil	310-804-8615
Cesar	Zorrilla	DBES	562-965-4654
Randy	Stuart	BBRI	310-863-0912
Mike	Mejia	BBRI	310-863-0860
James	Ranuin	DBES	909-810-6626
Iona	Jorge	DBES	951-956-1277
Art	Garcia	DBES	909-800-8461
Jr	Rodriguez	BOES	951-385-7625
David	Dicamas (?)	AIS	323-974-9532
Thomas	Williams	State Pipeline Marshal Pipeline Safety	562-425-1902
Anastasia	Norris	DFG/OSPR	310-310-9917
Garry	Kepes	BP	949-300-2666
Dash	Eskandaru (?)	BP	949-636-8220
Hal	Hammer	BP	562-755-8588
Marc	Trines (?)	BP	562-672-4055
Ray	Smith	ARB	949-279-0808
Corey	Kong	DFG/OSPR	562-477-7081
Wm	Short	ANCON/BP	310-864-1022
Kathleen	Andrews	CDOGGR	714-816-6847
Roy	Hernandez	ARB	949-795-1612
Pete	Lopez	ARB	949-289-0569
Robert	Ashbee Jr	ARB	562-254-1460
Robert	Casbee	ARB	562-256-4565
Victor	Garcia	ARB	562-843-3664
Aureliot	Lopez	ARB	310-631-2671
Matthew	Diener	USEPA START	310-310-0267
Julie	Skoglind	IBRRC	310-218-6825
Adam	Ribota	IBRRC	714-931-8343

Date: 12/22/2010

First Name	Last Name	Agency	Phone #
Brett	Bernstein	Shell (Asst Mgr)	213-494-6598
Thomas	Williams	State Fire Marshal Pipeline Safety	562-425-1902
Adam	Smith	USEPA START	310-405-2393
Maggie	Tymkow	USEPA START	310-701-0836
Anastasia	Norris	DFG/OSPR	310-310-9917
Bryan	Gollhofer	DFG/OSPR	562-708-7757
Kislev	Ang	LA City Watershed Protection	213-725-6296
Corey	Kong	DFG/OSPR	562-477-7081
Mario	Benjamin	LACoFD/HHMD	323-890-4317
Ernesto	Villaneal	Clean Harbors	310-722-1763
Jonathan	Hall	LAPD Hazmat	213-305-4059
Craig	Higa	LAPD Hazmat	213-926-0041
Garry	Kepes	BP USPL	949-300-2666
Don	Boroff	BP USPL	562-572-4009
John	Buck	LAFD	310-548-7516
Ed	Martin	LAFD	310-548-7516
Jason	Musante	USEPA	213-479-2120
Erik	Ricarro	DBES	909-499-6959
Louis	Finla (?)	EQM	562-243-1213
Dean	Matsuoka	BDES	951-241-6909
Eric	Pedrosa	PPC	562-531-2060
Greg	Barela	Paramount	5627 ext 2715
Gonzalo	Barriga	LA WPD	213-725-8862
Howard	Wong	LA WPD	213-725-6313
Dean	Persinger	THUMS	562-624-3284
Rey	Navarro	THUMS	562-624-3501
Roshanzamir	Amir	THUMS	562-624-3501
LCDR Chris	Boes	USCG	310-809-1579
Kim	Fowler	Tesoro	424-261(201?)-9437
James	Foto	DFG/OSPR	310-683-3032
Deirdre	Williams	LACoFD/HHMD	213-215-4278
Kathleen	Andrews	CA Div Oil & Gas	714-816-6847
Freddie	Bizzell	USCG	415-717-4492
Jeremy	O'Neal	USCG	415-720-4178
John	Rifilato	Plains	562-216-3863
Matthew	Diener	USEPA START	310-310-0267

Date: 12/21/2010

First Name	Last Name	Agency
Gonzalo	Barriga	LA WPD
Deirdre	Williams	LACoFD/HHMD
Many	Bendamin	LACoFD/HHMD
Frankie	Ramirez	BP
Dan	Gabel	Tesoro
Marcus	Garvey	Paragon Partners for the Joint Ports
Mike	Majia	Balfour Beatty Rail
Mario	Bentamin	LACoFD/HHMD
Anastasia	Norris	DFG/OSPR
Paul	Hafemann	Shell Plant Mgr
James	Davis	LAPD Hazmat
Craig	Higa	LAPD Hazmat
Ray	Gomez	LAFD
Rich	Durup	LA City Att. Inv.
Thomas	Williams	State Fire Marshal
Jeff	DeRonde	USCG
Corey	Kong	DFG/OSPR

Phone #
213-725-8862

562-572-3994

310-522-8602

714-379-3376 x233

310-863-0945

323-890-4317

310-310-9917

310-938-3507

213-926-8178

213-926-0041

310-548-7516

818-398-7383

562-425-1902

310-521-3780

562-477-7081



Initial Site Safety Plan
Project Name: Dominguez Channel Mystery Oil Spill



ICS KEY PERSONNEL - NRCS		
Project Manager	Mike Sica	310-628-0725
Project Supervisor	Jim Kiatos	310-628-1211
Regional Health & Safety Mgr	Aimee Wilson	310-629-1190
Safety Director	Mike Amen, CIH, CSP, CHMM	503-978-7297

...
Date: 1.17.11

Start Time: 0700

Job Number: 56448

☒ Land Emergency Response ☐ Marine Emergency Response ☐ Land Service ☐ Marine Service

SITE DESCRIPTION	This site specific health and safety plan has been developed to provide a safe work environment for the contracted work to be performed at Leeds Avenue near the intersection with Grant Street in Wilmington, California.
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SCOPE OF WORK	<ul style="list-style-type: none">• Site Orientation prior to work assignment (layout, ingress; egress; emergency evac, phones)• Preventive booming: containment of liquids on the surface of the water to prevent migration into open water• Continue recovery of surface product• Follow waste segregation & recovery plan and keep separate from other wastes• Maintain established temporary sand bag containment pond• Continue skimming and recovery efforts to minimize downstream impacts to pump station• Assess cleanup issues to implement once source has been isolated
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EQUIPMENT	<ul style="list-style-type: none">• Pickup truck• Gear truck• Generator• Weir skimmer• Air compressor• 3" pump & hoses• Light tower• 4" trash pump• Baker tanks• Vacuum trucks• Emergency response trailer• Rocket launcher• Roll off bins• Combustible gas indicator (4 gas meter) w/ PID
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CHEMICAL INFORMATION (see MSDS)

CHEMICAL / CAS	CHEMICAL PROPERTIES	EXPOSURE LIMITS	ROUTES OF ENTRY	SYMPTOMS
Crude Oil (sour)	<input type="checkbox"/> VD = 3 - 5 <input type="checkbox"/> VP = variable <input type="checkbox"/> S.G. = AP 0.7 to 0.9 <input type="checkbox"/> FP = <73 to >200 F	PEL: 5 mg/m ³ as mineral oil mist	Inhalation Ingestion	Eye, nose and throat irritation, vertigo, nausea, dyspnea, central
Benzene	<input type="checkbox"/> S.G. = 0.88 <input type="checkbox"/> VP = 75mmHg <input type="checkbox"/> FP = 12 F <input type="checkbox"/> LEL: 1.2% <input type="checkbox"/> UEL = 7.8%	PEL: 1 ppm IDLH: 500ppm	<input type="checkbox"/> Contact <input type="checkbox"/> Inhalation <input type="checkbox"/> Ingestion <input type="checkbox"/> Absorption	Irrit eyes, skin, nose, resp sys; dizz; head, nau, staggered gait; anor, lass; derm; bone marrow depress;
Hydrogen Sulfide	<input type="checkbox"/> MW = 34.1 <input type="checkbox"/> Sol = 0.4% <input type="checkbox"/> IP 10.4 6eV <input type="checkbox"/> UEL = 44% <input type="checkbox"/> LEL = 4.0%	PEL: 20 ppm IDLH: 100ppm	<input type="checkbox"/> Inhalation <input type="checkbox"/> Contact	Irrit eyes, resp sys; apnea, coma, convuls; conj, eye pain, lac, photo; dizz, head



Initial Site Safety Plan
Project Name: Dominguez Channel Mystery Oil Spill



PERSONAL PROTECTIVE EQUIPMENT

TASK	Level	MASK /CARTRIDGE /AIR	ADDITIONAL PPE
Establish support area / prepare	D	N/A	Hardhats, safety glasses, nomex coveralls, tyvek coveralls, leather gloves, PVC steel toe boots
Preventive Booming	D	N/A	Hardhats, safety glasses, tyvek coveralls, leather gloves, PVC steel toe boots, PFD.
Operator – Vac Truck	D	N/A	Hardhats, full-face shields, safety glasses, hearing protection, coveralls, neoprene outer gloves, PVC steel toe boots, high visible traffic vests
Load / transport material	D	N/A	Hardhats, safety glasses, tyvek coveralls, nitrile liner gloves, steel toe boots, high visible traffic vests
Decontaminate equipment	D	N/A	Hardhats, full-face shields, safety glasses, poly coated tyvek coveralls, neoprene outer gloves, nitrile liner gloves, PVC steel toe boots
Confined Space Entrants – NOT ANTICIPATED AT THIS SITE	B	Full-face air positive pressure demand respirator	Hardhat, safety glasses, nomex coveralls, nitrile steel toe boots, nitrile liners, pvc gloves, full body harness, retrieval winch set up, safety/rescue line for winch retrieval

ACTIVITY HAZARD ANALYSIS

Hazards Throughout the Job		
ITEM	HAZARD	PREVENTION
General Work Area	Slip / trip / fall	<ul style="list-style-type: none">designated pathways cleared of debrisuse step ladders for platforms requiring climbing up or downsee attached safety memo regarding climbing on ladders/equip
General Work Area –lifting	Strain	<ul style="list-style-type: none">plan and stage to minimize long distance carryingsplit heavy loads into smaller loadsuse assistant for heavy or awkward load
General Work Area –Traffic	Struck by	<ul style="list-style-type: none">Set up visible barricades on access roads;Wear high visibility safety vests
Refueling Equipment	Fire Spill	<ul style="list-style-type: none">Flammable liquids in explosion proof containersNo flammable liquids or gas stored in unmarked containersFire extinguisher near refueling and storage areasArea in front of extinguishers kept clearSpill containment plan discussed and in place
Heat stress	Heavy PPE Lack of breeze	<ul style="list-style-type: none">Drink plenty of fluids
Traffic	Struck by	<ul style="list-style-type: none">Set up visible barricadesOnly authorized NRCES personnel in work zones

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Hazards Unique to Each Phase of Project		
ITEM	HAZARD	PREVENTION
Trains on active railway	Struck by train Uneven walking surface	<ul style="list-style-type: none">Must have flagger present at all times to grant access to walk near railwayReflective orange safety vests must be wornMust maintain a minimum distance of 25' from trackUse caution while walking on rocky surfaceEnsure steel toe boots are laced up and secure on ankle
Load containment materials	Material	<ul style="list-style-type: none">plan and stage to minimize long distance lifting /carrying



Initial Site Safety Plan

Project Name: Dominguez Channel Mystery Oil Spill



Hazards Unique to Each Phase of Project		
into drop boxes	handling	<ul style="list-style-type: none"> split heavy loads into smaller loads use mechanical lifting aids when possible have assistant for heavy or awkward loads
Transport absorbent boom materials to and from work sites	Lifting Strain	<ul style="list-style-type: none"> Do not fill bags completely full buddy system for awkward loads
FLAMMABLE LIQUIDS	Smoking/ignition source	<ul style="list-style-type: none"> Post NO SMOKING signs around spill site/keep public out of work zone
Low visibility	No sunlight	<ul style="list-style-type: none"> Set up light towers Use head lamps on hard hats if needed
Liquid Pumping / agitation Into vacuum truck	Static Contact Liquid Spill	<ul style="list-style-type: none"> Bond and ground vacuum truck Bond and ground tank during cleaning / pumping Intrinsically safe equipment Spill containment plan discussed and in place during all cleaning operations Operator present at all times
Air monitoring	Inhalation Over exposure	<ul style="list-style-type: none"> Ensure current calibration Fresh air calibration Bump test MUST have (1) 4 gas meter per group in skiffs/vessels
Confined Space – NOT ANTICIPATED AT THIS SITE	Atmosphere Rescue Ventilation	<p>NRCES confined space permit for each entry. NRCES rescue /retrieval equipment in <i>Safety Required Sec.</i></p> <p><i>Note that this is horizontal rescue so may require wrist bands also</i></p>
Confined Space Entry - NOT ANTICIPATED AT THIS SITE	Hazardous Atmosphere Slips Trips Falls Illumination Opening of manhole	<ul style="list-style-type: none"> A confined space permit will be filled out by the supervisor prior to each entry at a new location. Pre-entry air monitoring will be conducted to confirm a non-hazardous atmosphere. Continuous air monitoring will be conducted by the hole watch and documented on NRCES' air monitoring log Forced air ventilation will be maintained All vertical entries will be made with the use of a winch and attendant. Three Points of contacts at all times when ascending or descending ladders Lower and raise equipment in buckets / ropes Any employee who participates in confined space entry has been trained in accordance with 29 CFR 1910.146 and 8 CCR 515. Good housekeeping practices will be maintained during entry. Ensure there are not any items sitting below the ladder that could pose a tripping hazard. Intrinsically safe flash lights & lights will be used to increase visibility in confined spaces When opening is removed, a "hole watch" will be posted at that position until the cover is replaced. Prior to entry, the confined space supervisor will fill out the confined space permit.

SAFETY EQUIPMENT REQUIRED:

✓	Eyewash / Shower	✓	Decon Pool / Supplies	✓	Wheel chocks for trucks
✓	First Aid Kit	✓	Fire Extinguisher (A/B/C)	✓	4 Way air monitoring instrument
✓	Reflective orange vest	✓	Barricades / rope	✓	Ladder

TRAINING REQUIREMENTS:

✓	HAZWOPER 40 / 24	✓	Hazwoper Supervisor	✓	Current 8 Hour Refresher
✓	First Aid /CPR	✓	Hazard Communication	✓	Incident Command System



Initial Site Safety Plan
Project Name: Dominguez Channel Mystery Oil Spill



DECONTAMINATION AND DISPOSAL

DECONTAMINATION EQUIPMENT	
<input checked="" type="checkbox"/> Visqueen (Ground)	<input checked="" type="checkbox"/> Rags to wipe boot bottoms
<input checked="" type="checkbox"/> Carpet Strips (Ground)	<input checked="" type="checkbox"/> Labeled Drums for disposal items
<input checked="" type="checkbox"/> Decon Pool / wash boots	<input checked="" type="checkbox"/> chairs to sit on for PPE removal
	<input checked="" type="checkbox"/> Soap /Water to wash face / hands
	<input checked="" type="checkbox"/> Disposable Paper Towels
	<input checked="" type="checkbox"/> Caution tape to designate decon area
PERSONNEL DECONTAMINATION PLAN	
<input type="checkbox"/> Establish three stage contamination reduction zone with small decon area at exit	
<input type="checkbox"/> Lay down visqueen under barrier	
<input type="checkbox"/> Place empty lined and labeled drums for contaminated PPE	
<input type="checkbox"/> Untape gloves and boots	
<input type="checkbox"/> Rinse boots if not using boot covers	
<input type="checkbox"/> Sit on chair prior to removing boots or outer PPE	
<input type="checkbox"/> Remove boots and outer gloves ;	
<input type="checkbox"/> dispose of tape / boots / gloves in labeled drum	
<input type="checkbox"/> Unzip suit / pull off hood (if hooded)	
<input type="checkbox"/> Roll down suit / inside out and place into labeled container: DO NOT USE KNIVES TO CUT OFF PPE	
<input type="checkbox"/> Remove inner gloves	
<input type="checkbox"/> PPE and debris will be bagged, accounted for, and bulked into the applicable waste bin	



Initial Site Safety Plan
Project Name: Dominguez Channel Mystery Oil Spill



EMERGENCY MEDICAL TREATMENT AND FIRST AID

TYPE CONTACT	FIRST AID
Eyes	<ul style="list-style-type: none">• Flush each eyes continuously for 15 minutes;• Tilt head to side to ensure liquid runs onto floor not other eye• refer to EMT for evaluation
Skin	<ul style="list-style-type: none">• Remove contaminated clothing immediately• Wash skin continuously for 15 minutes;• refer to physician if redness, swelling, or pain persists after washing
Breathing	<ul style="list-style-type: none">• Call 911;• Remove to fresh air immediately;• begin CPR until EMT arrives
Ingestion	<ul style="list-style-type: none">• aspiration hazard• do not induce vomiting• do not give anything by mouth

EMERGENCY RESPONSE PLAN
Attach Map to Nearest Hospital

ELEMENT	LOCATION, SPECIFICATION OR REASON FOR USE
NEAREST HOSPITAL	Pacific Hospital of Long Beach 2776 E Pacific Ave. Long Beach, CA 90806
NEAREST PHONE	Supervisor cell phone
FIRST AID KIT	Supervisor Truck
FIRE EXTINGUISHER	Supervisor truck and charged extinguishers on site
EYEWASH STATION AND EMERGENCY SHOWER	Supervisor will determine location on site or provide 55 gallon drum of water and hand pump
EVACUATION ROUTE / MEETING POINT	To be discussed and diagramed before start of job scope

ACCIDENT / INCIDENT REPORTING

NRCES Notification Requirements

FIRST AID INJURIES REQUIRING MEDICAL TREATMENT VEHICLE ACCIDENT NEAR MISS	<ul style="list-style-type: none">▪ Employees immediately report all accidents or incidents to the Site Project Manager / Safety Officer▪ Site Project Supervisor will immediately notify the NRCES Project Manager via cell phone.▪ If unable to reach the Project Manager, contact the NRCES Operations or NRCES Safety Manager.▪ Call their cell phones▪ Safety Manager will provide employee disposition guidelines and coordinate an accident investigation either by himself or Project Supervisor▪ NRCES Project Manager will relay information to Project Site Superintendent▪ Accident reporting forms are available electronically▪ Report all incidents to NRCES Safety Director▪ Ensure incident documented on Daily Safety Meeting Form▪ Determination will be made regarding need for post accident drug testing
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SAFETY PLAN APPROVAL

Site Safety Officer _____ **Date** _____

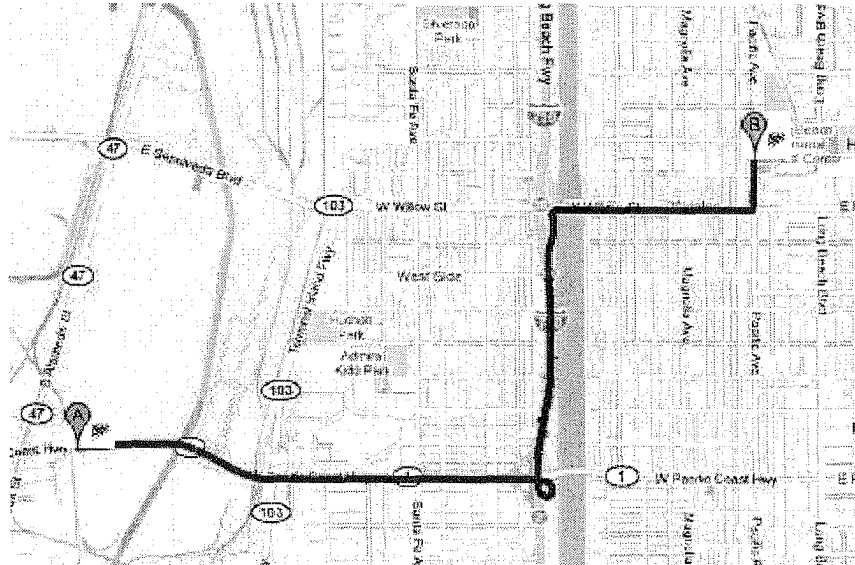
ACKNOWLEDGMENTS

I have read and understand the topics outlined on all pages of this HASP and will follow all the required safety rules.
****I am aware that I am to sign in at the beginning of the shift and sign out at the end of my shift on the daily safety meeting form.**
 I must notify the on site supervisor of any injury /accident/ near miss that I had or observed during my shift**
 I understand that I have the right to stop work and report any potential hazards to the NRCES Site Supervisor.
 After an injury/accident/near miss is reported, the Site Supervisor must call the H & S Manager at 310-629-1190.

[illegible]

ATTACHMENT B

Medical Facilities



A 1926 E Pacific Coast Hwy, Los Angeles, CA 90744

1. Head east on CA-1 S
About 2 mins
go 1.7 mi
total 1.7 mi
2. Slight right to merge onto I-710 N toward Pasadena
About 1 min
go 1.0 mi
total 2.7 mi
3. Take exit 3A for Willow St E
go 0.2 mi
total 3.0 mi
4. Merge onto W Willow St
About 2 mins
go 0.7 mi
total 3.7 mi
5. Turn left at Pacific Ave
Destination will be on the right
About 1 min
go 0.2 mi
total 3.9 mi

B 2776 Pacific Ave, Long Beach, CA 90806



Initial Site Safety Plan
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ATTACHMENT A
MATERIAL SAFETY DATA SHEETS

Crude Oil (Sour)



AMERADA HESS CORPORATION

NFPA 704 (Section 16)

MATERIAL SAFETY DATA SHEET

Crude Oil (Sour)**MSDS No. 6608****1. CHEMICAL PRODUCT and COMPANY INFORMATION (rev. Jan-99)**

Amerada Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

EMERGENCY TELEPHONE NUMBER (24 hrs): **CHEMTREC (800) 424-9300**
COMPANY CONTACT (business hours): Corporate Safety (732) 750-6000

SYNONYMS: Crude Petroleum; Sour Crude

See Section 16 for abbreviations and acronyms.

2. COMPOSITION and INFORMATION ON INGREDIENTS (rev. Jan-99)

INGREDIENT NAME	EXPOSURE LIMITS	CONCENTRATION PERCENT BY WEIGHT
Petroleum Oil CAS NUMBER: 8002-05-9	OSHA PEL-TWA: 5 mg/m ³ as mineral oil mist ACGIH TLV-TWA: 5 mg/m ³ as mineral oil mist* *1997 NOIC: sum of 15 NTP-listed polynuclear aromatic hydrocarbons 0.005 mg/m ³ , A1	100
Hydrogen Sulfide (H ₂ S) CAS NUMBER: 7783-06-4	OSHA PEL-Ceiling/Peak: 20 / 50 ppm ACGIH TLV-TWA/STEL: 10 / 15 ppm	< highly variable - see below >
Benzene CAS NUMBER: 71-43-2	OSHA PEL-TWA/STEL: 1 / 5 ppm ACGIH TLV-TWA: 0.5 / 2.5 ppm, A1, skin US Coast Guard: same as OSHA	Variable AP 0.1 to 1.0

A natural product derived from various oil production field primarily consisting of a complex combination of paraffinic and aromatic hydrocarbons and small amounts of nitrogen and sulfur compounds.

Crude oils are generally referred to as "sour" if they can release dissolved hydrogen sulfide (H₂S) which could result in a hazardous condition. The amount of dissolved H₂S can vary considerably with the crude oil source. Some sour crude oils can have an appreciable percentage of H₂S.

3. HAZARDS IDENTIFICATION (rev. Jan-99; Tox 99)**EMERGENCY OVERVIEW****CAUTION!**

**FLAMMABLE LIQUID - MAY EVOLVE TOXIC AND FLAMMABLE HYDROGEN SULFIDE GAS -
SLIGHT TO MODERATE IRRITANT - EFFECTS CENTRAL NERVOUS SYSTEM - HARMFUL OR
FATAL IF SWALLOWED**

High fire hazard. Keep away from heat, spark, open flame, and other ignition sources.

HYDROGEN SULFIDE (toxic gas) may be released. High concentration may cause immediate unconsciousness - death may result unless victim is promptly and successfully resuscitated. Hydrogen sulfide causes eye irritation.

If ingested, do NOT induce vomiting, as this may cause chemical pneumonia (fluid in the lungs). Contact may cause eye, skin and mucous membrane irritation. Avoid prolonged breathing of vapors or mists. Inhalation may cause irritation, anesthetic effects (dizziness, nausea, headache, intoxication), and respiratory system effects.

Long-term exposure may cause effects to specific organs, such as to the liver, kidneys, blood, nervous system, and skin. Contains benzene, which can cause blood disease, including anemia and leukemia.

EYES

Contact with eyes may cause moderate to severe irritation.

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SKIN

Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are exposed repeatedly. Rare, precancerous warts on the forearms, backs of hands and scrotum have been reported from prolonged or repeated skin contact.

INGESTION

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

INHALATION

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: Irritating and toxic hydrogen sulfide gas may be found in confined vapor spaces. Greater than 15 - 20 ppm continuous exposure can cause mucous membrane and respiratory tract irritation. 50 - 500 ppm can cause headache, nausea, and dizziness, loss of reasoning and balance, difficulty in breathing, fluid in the lungs, and possible loss of consciousness. Greater than 500 ppm can cause rapid or immediate unconsciousness due to respiratory paralysis and death by suffocation unless the victim is removed from exposure and successfully resuscitated.

The "rotten egg" odor of hydrogen sulfide is not a reliable indicator for warning of exposure, since olfactory fatigue (loss of smell) readily occurs, especially at concentrations above 50 ppm. At high concentrations, the victim may not even recognize the odor before becoming unconscious.

CHRONIC and CARCINOGENICITY

Similar products produced skin cancer and systemic toxicity in laboratory animals following repeated applications. This product contains polynuclear aromatic hydrocarbons which have been shown to be carcinogenic in laboratory animals after repeated and prolonged skin contact. The significance of these results to human exposures has not been determined - see Section 11, Toxicological Information.

Contains benzene, a regulated human carcinogen. Benzene has the potential to cause anemia and other blood diseases, including leukemia, after repeated and prolonged exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Irritation from skin exposure may aggravate existing open wounds, skin disorders, and dermatitis (rash). Pre-existing, chronic respiratory disease, liver or kidney dysfunction, or central nervous system disorders may be aggravated by exposure.

4. FIRST AID MEASURES (rev. Jan-99; Tox-99)

EYES

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

SKIN

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or waterless hand cleanser. Obtain medical attention if irritation or redness develops. Thermal burns require immediate medical attention depending on the severity and the area of the body burned.

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INGESTION

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

INHALATION

Remove person to fresh air. If person is not breathing provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

5. FIRE FIGHTING MEASURES (rev. Oct-94)

FLAMMABLE PROPERTIES:

FLASH POINT: < 73 to > 200 °F (< 23 to > 93 °C)
AUTOIGNITION TEMPERATURE: N/D
OSHA/NFPA FLAMMABILITY CLASS: 1B (flammable liquid)
LOWER EXPLOSIVE LIMIT (%): N/D
UPPER EXPLOSIVE LIMIT (%): N/D

FIRE AND EXPLOSION HAZARDS

Flash point and explosive limits are highly dependent on the crude oil source. Treat as an OSHA/NFPA flammable liquid unless otherwise indicated. Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

EXTINGUISHING MEDIA

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO₂, water spray, fire fighting foam, or Halon.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

FIRE FIGHTING INSTRUCTIONS

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

See Section 16 for the NFPA 704 Hazard Rating.

6. ACCIDENTAL RELEASE MEASURES (rev. Jan-99)

ACTIVATE FACILITY'S SPILL CONTINGENCY OR EMERGENCY RESPONSE PLAN.

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Hydrogen sulfide may be evolved during a release - ensure response personnel are adequately protected - see Section 8.

Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system

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is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors.

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Response and clean-up crews must be properly trained and must utilize proper protective equipment.

7. HANDLING and STORAGE (rev. Jan-99)

HANDLING PRECAUTIONS

Handle as a flammable liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

STORAGE PRECAUTIONS

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

Hydrogen sulfide may accumulate in tanks and bulk transport compartments. Consider appropriate respiratory protection (see Section 8). Stand upwind. Avoid vapors when opening hatches and dome covers. Confined spaces should be ventilated prior to entry.

WORK/HYGIENIC PRACTICES

Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use gasoline or solvents (naphtha, kerosene, etc.) for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

Naturally Occurring Radioactive Materials (NORM):

Industry experience indicates that this material may contain small amounts of naturally-occurring uranium, thorium, and their decay products (NORM) which can accumulate in oil production and process equipment, particularly the equipment handling the water associated with crude oil production. Scales, other deposits, and sludges from this equipment may have a significant accumulation of NORM. Gamma radiation above background may be detected external to equipment contaminated with NORM. Production equipment should be assessed for external gamma radiation; access may need to be restricted in accordance with OSHA 29 CFR 1910.96 during operation. Such equipment should also be assumed to be internally contaminated with long half-life decay products that emit alpha radiation, which is a hazard if inhaled or ingested. Unless measurements indicate otherwise, steps should be taken to minimize skin and inhalation exposure to NORM dusts/mists by wearing personal protective clothing [such as disposable Tyvek® (DuPont)], utilizing respiratory protection (minimum of HEPA filter), and practicing good personal hygiene. Please refer to API Bulletin E2, "Bulletin on Management of Naturally Occurring Radioactive Materials in Oil and Gas Production," April 1, 1992, for additional information on managing NORM.

8. EXPOSURE CONTROLS and PERSONAL PROTECTION (rev. Jan-99)

ENGINEERING CONTROLS

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

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EYE/FACE PROTECTION

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying

SKIN PROTECTION

Gloves constructed of nitrile, neoprene, or PVC are recommended. Chemical protective clothing such as of E.I. DuPont Tyvek QC®, Saranex®, TyChem® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information

RESPIRATORY PROTECTION

If a hydrogen sulfide hazard is present (that is, exposure potential above H₂S permissible exposure limit), use a positive-pressure SCBA or Type C supplied air respirator with escape bottle.

Where it has been determined that there is no hydrogen sulfide exposure hazard (that is, exposure potential below H₂S permissible exposure limit), a NIOSH/ MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

9. PHYSICAL and CHEMICAL PROPERTIES (rev. Oct-94)

APPEARANCE

Variable depending on its source; typical is a thick, dark yellow to brown or greenish black liquid

ODOR

A characteristic, petroleum/asphalt-type odor

Hydrogen sulfide (H₂S) has a rotten egg "sulfurous" odor. This odor should not be used as a warning property of toxic levels because H₂S can overwhelm and deaden the sense of smell. Also, the odor of H₂S in heavy oils can easily be masked by the petroleum-like odor of the oil. Therefore, the smell of H₂S should not be used as an indicator of a hazardous condition - a H₂S meter or colorimetric indicating tubes are typically used to determine the concentration of H₂S.

BASIC PHYSICAL PROPERTIES

The properties of crude oil are highly variable depending on its source.

BOILING RANGE: AP 100 - 1000+ °F (> 260 °C)

VAPOR PRESSURE: Variable

VAPOR DENSITY (air = 1): 3 - 5 typical

SPECIFIC GRAVITY (H₂O = 1): AP 0.7 to 0.9 (varies)

PERCENT VOLATILES: Variable

EVAPORATION RATE: Variable

SOLUBILITY (H₂O): Insoluble to slightly soluble

10. STABILITY and REACTIVITY (rev. Oct-94)

STABILITY: Stable. Hazardous polymerization will not occur.

CONDITIONS TO AVOID and INCOMPATIBLE MATERIALS

Material is stable under normal conditions. Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Keep away from strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS:

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

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11. TOXICOLOGICAL PROPERTIES (rev. Jan-99; Tox-99)

CHRONIC EFFECTS AND CARCINOGENICITY

Carcinogenicity: OSHA: NO IARC: NO NTP: NO ACGIH: 1997 NOIC: A1
Dermal carcinogenicity: positive - mice

Studies have shown that similar products produce skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.

This product contains benzene. Human health studies indicate that prolonged and/or repeated overexposure to benzene may cause damage to the blood-forming system (particularly bone marrow), and serious blood disorders such as aplastic anemia and leukemia. Benzene is listed as a human carcinogen by the NTP, IARC, OSHA and ACGIH.

MUTAGENICITY (genetic effects)

Some crude oils and crude oil fractions have been positive in mutagenicity studies.

12. ECOLOGICAL INFORMATION (rev. Jan-99)

Keep out of sewers, drainage and waterways. Report spills and releases, as applicable, under Federal and State regulations.

13. DISPOSAL CONSIDERATIONS (rev. Jan-99)

Consult federal, state and local waste regulations to determine appropriate disposal options.

14. TRANSPORTATION INFORMATION (rev. Jan-99)

PROPER SHIPPING NAME: PETROLEUM CRUDE OIL
HAZARD CLASS; PACKING GROUP: 3; determine flash point to accurately classify packing group
DOT IDENTIFICATION NUMBER: UN 1267
DOT SHIPPING LABEL: FLAMMABLE LIQUID

15. REGULATORY INFORMATION (rev. Jan-99)

U.S. FEDERAL, STATE and LOCAL REGULATORY INFORMATION

This product and its constituents listed herein are on the EPA TSCA Inventory. Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other regulations at the state and/or local level. Consult those regulations applicable to your facility/operation.

CLEAN WATER ACT (OIL SPILLS)

Any spill or release of this product to "navigable waters" (essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) or, if not practical, the U.S. Coast Guard with follow-up to the National Response Center, as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil, refined, and unrefined petroleum products and any indigenous components of such. However, other federal reporting requirements (e.g., SARA Section 304 as well as the Clean Water Act if the spill occurs on navigable waters) may still apply.

SARA SECTION 311/312 - HAZARD CLASSES

<u>ACUTE HEALTH</u>	<u>CHRONIC HEALTH</u>	<u>FIRE</u>	<u>SUDDEN RELEASE OF PRESSURE</u>	<u>REACTIVE</u>
X	X	X	--	--

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SARA SECTION 313 - SUPPLIER NOTIFICATION

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

INGREDIENT NAME (CAS NUMBER)	CONCENTRATION WT. PERCENT
Benzene (71-43-2)	0.1 to 1.0

CANADIAN REGULATORY INFORMATION (WHMIS)

Class B, Division 2 (flammable liquid)

Class D, Division 1A (Very toxic, acute)

Class D, Division 1B (Very toxic by other means)

16. OTHER INFORMATION (rev. Feb-00)

NFPA® HAZARD RATING	HEALTH:	2	Moderate
	FIRE:	3	High
	REACTIVITY:	0	Negligible

HMIS® HAZARD RATING	HEALTH:	3*	High
	FIRE:	3	High
	REACTIVITY:	0	Negligible

*Chronic

SPECIAL HAZARDS: May release toxic hydrogen sulfide (poison gas).

SUPERSEDES MSDS DATED: 01/27/99

ABBREVIATIONS:

AP = Approximately < = Less than > = Greater than
N/A = Not Applicable N/D = Not Determined ppm = parts per million

ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists	OPA	Oil Pollution Act of 1990
AIHA	American Industrial Hygiene Association	OSHA	U.S. Occupational Safety & Health Administration
ANSI	American National Standards Institute (212) 642-4900	PEL	Permissible Exposure Limit (OSHA)
API	American Petroleum Institute (202) 682-8000	RCRA	Resource Conservation and Recovery Act
CERCLA	Comprehensive Emergency Response, Compensation, and Liability Act	REL	Recommended Exposure Limit (NIOSH)
DOT	U.S. Department of Transportation [General Info: (800)467-4922]	SARA	Superfund Amendments and Reauthorization Act of 1986 Title III
EPA	U.S. Environmental Protection Agency	SCBA	Self-Contained Breathing Apparatus
HMIS	Hazardous Materials Information System	SPCC	Spill Prevention, Control, and Countermeasures
IARC	International Agency For Research On Cancer	STEL	Short-Term Exposure Limit (generally 15 minutes)
MSHA	Mine Safety and Health Administration	TLV	Threshold Limit Value (ACGIH)
NFPA	National Fire Protection Association (617) 770-3000	TSCA	Toxic Substances Control Act
NIOSH	National Institute of Occupational Safety and Health	TWA	Time Weighted Average (8 hr.)
NOIC	Notice of Intended Change (proposed change to ACGIH TLV)	WEEL	Workplace Environmental Exposure Level (AIHA)
NTP	National Toxicology Program	WHMIS	Canadian Workplace Hazardous Materials Information System

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